



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,767	04/23/2001	J. Graham Mobley	A-7195	4247
5642                      7590                      12/29/2008 SCIENTIFIC-ATLANTA, INC. INTELLECTUAL PROPERTY DEPARTMENT 5030 SUGARLOAF PARKWAY LAWRENCEVILLE, GA 30044				
EXAMINER				
BROWN, RUEBEN M				
ART UNIT		PAPER NUMBER		
2424				
NOTIFICATION DATE		DELIVERY MODE		
12/29/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOmail@sciatl.com

# Office Action Summary

**Application No.**

09/840,767

**Applicant(s)**

MOBLEY ET AL.

**Examiner**

REUBEN M. BROWN

**Art Unit**

2424

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 19 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-6 and 9-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1, 3-4, 6, 9-10 & 12-22 is/are rejected.
- 7) ☐ Claim(s) 5 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/C)
- Paper No(s)/Mail Date 9/19/08
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/19/08 has been entered.

### ***Response to Arguments***

2. Applicant's arguments with respect to the claims have been considered but are not persuasive. Applicant's first argument, found on page 12 is that "the combiner of Hoarty is not a reverse transmitter". However, examiner is presently relying on the combiner 47 and the reverse optical transmitter 43c of Hoarty, (Fig. 7; col. 7, lines 1-10). Clearly, Hoarty provides a reverse optical transmitter.

Applicant's next argument is that the trunk filters 7 of Dufresne are not appropriate for the rejection. Examiner respectfully disagrees and points out that the whole circuit is a part of the return or upstream transmission system of Dufresne. Therefore, the point of combinability is that

Dufresne teaches a method of keeping a device shut off until a sensor senses the presence of the upstream carrier signal, which reduces the amount of ingress noise transmitted, and is useful at any point in the upstream system, including at the transmitter itself.

Applicant's next argument is that the squelch circuit of Oakley is not a part of a transmitter. However, examiner respectfully disagrees and asserts that since the squelch circuit is a part of the reverse transmission unit, as found in col. 5, lines 40-45, effectively it is a part of the reverse transmitter. In other words, the squelch circuit is an integral part of the reverse transmission unit of Oakley and thus is properly combinable with Hoarty & Dufresne. Applicant argues that it would not be necessary to combine Oakley with Hoarty or Dufresne, because the references do not discuss any loss in the system. However, the point of Oakley is that it teaches that the use of the well known delay technique because it was well known at the time the invention was made, that may be loss of information in any number of circuits, Oakley overcomes this problem, see col. 6, lines 1-12 and also compensates for envelope delay distortion, see col. 1, lines 45-65.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 6, 9, 12, 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoarty, (U.S. Pat # 5,485,197) in view of Admitted Prior Art Fig. 3, and further in view of Dufresne, (U.S. Pat # 4,920,533) and Oakley, (U.S. Pat # 3,886,454).

Considering amended claim 1, the claimed subject matter is analyzed, as best understood, in light of the above 112 first paragraph rejections. The claimed communication system for transmitting forward & signals, the communication system comprising:

*'a plurality of optical nodes including a reverse optical transmitter, each optical node for receiving reverse analog electrical signals modulated onto RF carriers from a plurality of subscriber equipment',* is met by the combiners 47 of Hoarty, see Fig. 4; Fig. 7; Fig. 9; col. 6, lines 62-67 thru col. 7, lines 1-10; col. 8, lines 1-12.

As for the claimed, *'converter for converting the reverse analog electrical signals into a digitized electrical reverse signals',* Hoarty teaches upstream communication over a coax and then fiber optic medium, Fig. 4 & Fig. 7. However, Hoarty does not explicitly discuss an A/D converter. Nevertheless, Admitted Prior Art Fig. 3, discloses an A/D converter 308 that receives RF in, converts the RF to analog signals and transmits using Digital Transmitter 305. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Hoarty with A/D disclosed in Admitted Prior Art Fig. 3, at least for the known benefit of transmitting upstream signals from a subscriber in analog form and then converting to digital for

transmission over a fiber optic cable, which because of its bandwidth allows many more signals to be transmitted than could be transmitted in analog form.

*'and RF carrier-detect circuit coupled to the converter for monitoring at least one of the input and output of the converter for detecting the presence of the RF carrier signal in the reverse analog signals and providing a response'*, is not explicitly taught. However Dufresne, which is in the same field of endeavor of upstream transmission, discloses that the system operates such that the filter 7 will remain shut off until it senses the presence of upstream carrier signal, see col. 5, lines 25-42. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Hoarty with the feature of detecting the presence of upstream data signals, and only transmitting at that time, for the improvement of reducing the amount of ingress noise transmitted upstream, as taught by Dufresne, col. 1, lines 46-60; col. 5, lines 30-34. Thus, the feature is met by the combination of Hoarty & Dufresne.

As for the claimed *'delay circuit...'*, Dufresne does not discuss such a feature. Nevertheless Oakley, which is in the same field of endeavor provides a teaching of a delay 84, which holds the signal until a threshold is sensed by sensor 83, and then closes the switch 82 to allow the signals to pass, see (Fig. 2B; col. 5, lines 45-67 thru col. 6, lines 1-20). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify the combination of Hoarty & Dufresne with the technique of a delay circuit and switch, for the desirable advantage of avoiding losing any of the message information, prior to sensor 83 sending its control signal to switch 82, as taught by Oakley, col. 2, lines 11-67.

Regarding the additionally claimed feature of, *'wherein the reverse transmitter transmits the digitized reverse signals only in the presence of the detected carrier signal'* is met by the combination of combiner 47 & optical transmitter 43c, in Hoarty and Dufresne, col. 5, lines 25-42.

*'reverse optical receiver coupled to the plurality of optical nodes via the digital network for receiving and passively combining the reverse digital optical signals from each of the plurality of optical nodes'* reads on the gateway 66b of Hoarty, Fig 7; Fig. 15; col. 11, lines 55-67

Considering claim 3, the claimed *'the reverse optical receiver coupled to the digital network for receiving the combined digital optical signals and converting the digital optical signals to analog electrical optical signals'*, is met by the combination of Admitted Prior Art Fig. 3, Digital Receiver 310 and D/A converter 315 and the combiner 47 & transmitter 43c. *'A headend that receives and process the analog RF signals'*, is also met by the headend 41 of Hoarty. The claimed *'burst-mode...'* feature also reads on the operation of Hoarty & Dufresne.

Dufresne also discloses that data transmitted from the headend is in packet form that includes destination information, Fig. 3; col. 6, lines 27-37.

Considering claim 6, the claimed elements of a communication system for '*transmitting and receiving optical signals over a communications medium*', corresponds directly with subject matter mentioned above in the rejection of claim 1, and is likewise treated. For instance, the claimed '*plurality of optical transmitters*', corresponds with the '*plurality of optical nodes*', Hoarty inherently comprises a plurality of such devices.

As for the additionally claimed feature of transmitting on a '*predetermined wavelength*', it would have been obvious for one ordinary skill in the art at the time the invention was made, to modify Hoarty to transmit the upstream signal on a predetermined wavelength, at least for the desirable benefit of avoiding collision, since when a plurality of channels are predetermined, such an arrangement serves to avoid collision on the site.

Considering claim 9, Hoarty teaches that the upstream signals may be transmitted as addressed packets, col. 9, lines 58-65; col. 12, lines 1-15.

Considering claim 12, Hoarty is a hybrid fiber coax system.

Considering claim 14, the claimed A/D converter is met by the A/D converter 308 disclosed in Admitted Prior Art Fig. 3. The transmitter 43c meets the claimed, '*optical transmitter converts digitized reverse signal to provide reverse digitized optical signal*'.



Considering claim 15, it would have been obvious to operate the carrier detect of Dufresne by detecting a carrier signal at any point in the circuit.

4. Claims 4, 10 & 13, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoarty, Admitted Prior Art Fig. 3, Dufresne & Oakley, and further in view of LaJoie, (U.S. Pat # 5,850,218).

Considering claims 4, 10 & 13, Hoarty discloses that the headend may transmit programming in a digital and analog format, col. 7, lines 35-67; col. 10, lines 1-28; Fig. 8. However, Hoarty does not discuss the signals may be received at the headend in digital or analog formats.

It is pointed out that the claimed feature is broad enough to read on a single headend that receives both digital and analog signals. LaJoie provides a teaching of a headend that receives both analog and digital signals, (col. 2, lines 58-67; col. 10, lines 1-67 & col. 11). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Hoarty with the teachings of LaJoie, for the desirable advantage of providing a wider range of methods for upstream communication.

Regarding claim 13, the claimed subject matter reads on La Joie teaching that Reverse Data channels may occupy different sections of the RF spectrum, which contributes to collision avoidance, see col. 10, lines 64-65.

5. Claims 16-19 & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoarty, Admitted Prior Art Fig. 3 & Dufresne.

Considering claim 16, the claimed method for conducting reverse communications in a subscriber TV system, comprising steps that correspond with subject matter mentioned above in the rejection of claim 1, are likewise analyzed.

*'receiving at an optical transmitter reverse analog electrical signal from a subscriber equipment'* corresponds with the *'optical node'*, and is met by transmitter 43c of Hoarty.

*'converting the reverse signal to a reverse digital optical signal'*, is also met by the operation of transmitter 43c and Admitted Prior Art Fig. 3. As for additionally claimed, *'only when the presence of a reverse carrier signal is detected by a carrier-detect circuit'*, the feature also reads on the rejection of Hoarty, in view of Dufresne, as analyzed in claim 1.

*'transmitting the reverse digital optical signals upstream to a digital network only when the presence of a reverse carrier signal is detected'* is met by the optical trunk 42c of Hoarty, Fig. 4 & Dufresne, as discussed in claim 1.

*'passively combining a plurality of the reverse optical signals from a plurality of optical transmitters at a digital network'*, reads on the trunk 42c of Hoarty.

*'converting at a receiver the plurality of reverse digital optical signals back to a plurality of reverse analog electrical signals'*, reads on the operation of the RF demodulators 155 of Hoarty.

Considering claim 17, the claimed subject matter is met by the A/D converter of Admitted Prior Art Fig. 3.

Considering claim 18, both Hoarty & Dufresne disclose that data transmitted from the headend is in packet form that includes destination information.

Considering claim 19, as for the additionally claimed feature of *'transmitting on a common wavelength'*, it would have been obvious for one ordinary skill in the art at the time the invention was made, to modify Hoarty to transmit the upstream signal on a common wavelength, at least for the desirable benefit of utilizing standard configured hardware.

Considering claim 22, Hoarty teaches that the upstream signals are recombined by demodulators 155.

6. Claims 20-21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoarty, Admitted Prior Art Fig. 3 & Dufresne, further in view of LaJoie.

Considering claim 20, Hoarty discloses that the headend may transmit programming in a digital and analog format, col. 7, lines 35-67; col. 10, lines 1-28; Fig. 8. However, Hoarty does not discuss that the signals may be received at the headend in digital or analog formats.

It is pointed out that the claimed feature is broad enough to read on a single headend that receives both digital and analog signals. LaJoie provides a teaching of a headend that receives both analog and digital signals, (col. 2, lines 58-67; col. 10, lines 1-67 & col. 11). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Hoarty with the teachings of LaJoie, for the desirable advantage of providing a wider range of methods for upstream communication.

Considering claim 21, Hoarty teaches that the upstream signals may be transmitted as addressed packets, col. 9, lines 58-65; col. 12, lines 1-15.

*Allowable Subject Matter*

7. Claims 5 & 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) George Automatic update of network topology

Art Unit: 2424

**Any response to this action should be mailed to:**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**or faxed to:**

(571) 273-8300, (for formal communications intended for entry)

**Or:**

(571) 273-7290 (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reuben M. Brown whose telephone number is (571) 272-7290. The examiner can normally be reached on M-F(8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (571) 272-7331. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications and After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Reuben M. Brown/  
Patent Examiner, Art Unit 2424